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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,410	04/09/2004	Greg Pasternack	UC04-059-1	8426

8156 7590 09/14/2005

JOHN P. O'BANION
O'BANION & RITCHEY LLP
400 CAPITOL MALL SUITE 1550
SACRAMENTO, CA 95814

EXAMINER	
BONANTO, GEORGE P	

ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/821,410	PASTERNACK ET AL.	
	Examiner	Art Unit	
	George P. Bonanto	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-23,25-29 and 31-33* is/are rejected.

7)☐ Claim(s) *11,24,30 and 34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: paragraph 86 contains the phrase, "in another embodiment, "turntable 272 is configured with a full-cover index plate." The correct reference numeral for the turntable is 270. Appropriate correction is required.

Claim Objections

Claim1 is objected to because of the following informalities: claim 1 contains the phrase, "for positioning adjacent a hydraulic feature." The hydraulic feature has already been introduced in the claim, and, therefore, the phrase should refer to "the hydraulic feature" if the intended meaning is that the platform positions the measuring rod adjacent to the hydraulic feature being measured. Appropriate correction is required.

Claims 5, 13, 21, 25, 26, 28, 31 and 32 are objected to because of the following informalities: the claims contain the phrase, "the group consisting essentially of." The word "essentially" makes the group ambiguous and should be deleted. Appropriate correction is required.

Claims 12, 25 and 31 are objected to because of the following informalities: claim elements "weather," "soils," "sediments," "volcanic gasses" and "hydrothermal fluids" are not "characteristics" and are, therefore, improperly included in a list of "characteristics" measured. Furthermore, their inclusion in the list makes the claims confusing. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Published Jap. Application No. 60-233562 by Sakai.

Sakai discloses a portable apparatus for measuring characteristics of a hydraulic feature in a river or stream comprising a measuring rod adapted to measure characteristics of a hydraulic feature (pole 1, Fig. 1; abstract) means for positioning said measuring rod in a desired location relative to a hydraulic feature (carrier 13, Fig. 1; abstract) a platform adapted to support said positioning means, said platform further adapted for positioning adjacent to a hydraulic feature (frames 9 and ropes 10 and 11, Fig. 1; abstract).

Claims 1-5, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,854,166 to Futrell, II.

As to claim 1, Futrell, II discloses a portable apparatus for measuring characteristics of a hydraulic feature in a river or stream comprising a measuring rod adapted to measure characteristics of a hydraulic feature (hand-held wading rod; col. 1, lines 12-35) means for positioning said measuring rod in a desired location (hydrographer wading into the river; col. 1, lines 32-59) and a platform, said platform adapted to support said positioning means, said platform further adapted for positioning adjacent a hydraulic feature (hydrographer; col. 1, lines 32-59).

As to claim 2, Futrell, II further discloses that the measuring rod has a hollow (col. 3, line 65) hexagonal cross section (col. 2, lines 1-2).

As to claim 3, Futrell, II further discloses that the measuring rod has a round tubular cross section (col. 2, lines 1-2).

As to claim 4, Futrell, II further discloses that the measuring rod has a visual index to measure the position of said measuring rod relative to said positioning means (graduations 15; col. 2 line 66 to col. 3 line 9 and Figure).

As to claim 5, Futrell, II further discloses that the measuring rod is adapted to accommodate a current meter (current meter receiving means 20; col. 3, lines 24-54 and Figure).

As to claim 12, Futrell, II further discloses that the measuring rod is adapted to water quality (wading rod measures flow velocity of river, col. 1, lines 32-33).

As to claim 13, Futrell, II further discloses that the measuring rod is adapted to accommodate an air speed indicator (measuring the velocity of air; col. 1, lines 18-20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,854,166 to Futrell, II, as applied to claim 1, in view of U.S. Pat No. 2,684,109 to Youmans.

Futrell, II fails to disclose that the platform comprises a tripod having adjustable legs.

Youmans discloses a platform that comprises a tripod having adjustable legs (col. 2, lines 9-35).

It would have been obvious to one of ordinary skill in the art to modify the portable measuring apparatus by supporting the measuring rod using the adjustable tripod support of Youmans in order to make the support adjustable for optimal use by different individuals (col. 1, lines 24-28,) to make the support portable (col. 1, lines 35-40) and to provide secure vertical alignment of the support even on wet, uneven surfaces (col. 2, lines 20-35).

Claims 7, 9, 14, 19-21,25 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Published Jap. Application No. 60-233562 by Sakai, as applied to claim 1, in view of U.S. Pat. No. 3,796,322 to Cording.

As to claim 7, Sakai discloses that the positioning means is adapted to extend over a hydraulic feature (Fig.1) a carriage (carrier 13, Fig. 1) said carriage adapted to travel along the positioning means (abstract) said carriage further adapted to position the measuring rod vertically (abstract) wherein said measuring rod is positioned to measure a hydraulic feature when said positioning means is positioned at a desired orientation on said platform and said carriage is positioned at a desired location on said positioning means and said measuring rod is positioned at a desired elevation relative to a hydraulic feature. Sakai fails, however, to disclose that the positioning means comprises a boom, said boom oriented horizontally and coupled to said platform, said boom adapted to articulate on a vertical axis through said platform.

Cording discloses positioning means comprising a boom, said boom oriented horizontally and coupled to a platform, said boom adapted to articulate on a vertical axis through said platform (Fig. 1 and col. 2, lines 7-16).

It would have been obvious to one of ordinary skill in the art to modify the measuring apparatus of Sakai by replacing the frames and ropes with the mast and boom of Cording in order to enable measurement of the hydraulic feature from a single side of a river, and to make the positioning means rotatable.

As to claim 9, Sakai further discloses that the positioning means comprise a winch coupled to the positioning means (winding drum 25, Fig. 1; abstract), a winch cable having a first end and a second end, the first end coupled to the winch (cable 19, Fig. 1) and a pulley coupled to the carriage, said pulley adapted to support the winch cable (pulleys 20 and 22, Fig. 1) the second end of the winch cable coupled to the measuring rod (Fig. 1) wherein the measuring rod is repositioned upward when the winch cable is retracted by the winch through the pulley (abstract).

As to claim 14, Sakai discloses a portable apparatus for measuring characteristics of a hydraulic feature in a river or stream comprising a platform adapted for positioning adjacent to a hydraulic feature (Fig. 1; abstract) positioning means adapted to extend over a hydraulic feature (Fig. 1) a carriage adapted to travel along the positioning means (Fig. 1, abstract) means for positioning the carriage on the positioning means (abstract) a measuring rod slidingly coupled to the carriage (Fig. 1; abstract) having a measuring end adapted to measure a characteristic of a hydraulic feature (Fig. 1; abstract) means for positioning the measuring rod vertically relative to the carriage (Fig. 1; abstract) wherein the measuring rod is positioned to measure a characteristic of a hydraulic feature when the positioning means is positioned at a desired orientation on the platform, the carriage is positioned at a desired location of the positioning means and the measuring end of the measuring rod is positioned at a desired elevation relative to a hydraulic

feature (abstract). Sakai fails, however, to disclose that the positioning means is a boom, coupled to the platform, adapted to be oriented horizontally relative to the platform and adapted to articulate on a vertical axis through the platform.

Cording discloses positioning means that comprise a boom (boom 22, Fig. 1) coupled to a platform (Fig. 1) adapted to be oriented horizontally relative to the platform (Fig. 1) adapted to articulate on a vertical axis through the platform (col. 2, lines 7-16).

It would have been obvious to one of ordinary skill in the art to modify the measuring apparatus of Sakai by replacing the frames and ropes with the mast and boom of Cording in order to enable measurement of the hydraulic feature from a single side of a river, and to make the positioning means rotatable.

As to claim 19, Sakai further discloses that the measuring rod has a visual index to measure the elevation of the measuring end of said measuring rod relative to the carriage (depth gradations, abstract).

As to claim 20, Sakai further discloses that the means for positioning the measuring rod comprises a winch coupled to the positioning means (winch 25, Fig. 1) a winch cable having a first end and a second end, the first end coupled to the winch (cable 19, Fig. 1) a pulley coupled to the carriage (pulleys 20 and 22, Fig. 1) said pulley adapted to support said winch cable (Fig. 1) said second end of said winch cable coupled to said measuring rod proximate said measuring end (Fig. 1) wherein said measuring end of said measuring rod is repositioned upward when said winch cable is retracted by said winch through said pulley (abstract; Fig. 1).

As to claim 21, Sakai further discloses that the measuring rod is adapted to accommodate a propeller (current meter 2 having a propeller, abstract).

As to claim 25, Sakai further discloses that the apparatus is adapted to measure water quality (flow velocity of river, abstract).

As to claim 33, Sakai discloses a method for measuring characteristics of a hydraulic feature in a river or stream comprising, providing a portable hydraulic feature measuring apparatus comprising a platform, a positioning apparatus, a carriage and a measuring rod (Fig. 1; abstract), positioning the platform adjacent a hydraulic feature (Fig. 1) positioning the positioning apparatus on the platform in a desired orientation (Fig. 1) positioning the carriage on the positioning means in a desired location on the positioning means (Fig. 1; abstract) positioning the measuring rod at a desired elevation (abstract) and measuring a characteristic of the hydraulic feature through said measuring rod (abstract). Sakai fails, however, to disclose that the positioning means is a boom.

Cording discloses a positioning means that is a boom.

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of the method of Sakai by replacing the positioning means with the boom of Cording in order to enable measurement of the hydraulic feature from a single side of a river, and to make the positioning means rotatable.

Claims 8, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Published Jap. Application No. 60-233562 to Sakai in view of U.S. Pat. No. 3,796,322 to Cording, as applied to claims 1, 7 and 14 above, and further in view of U.S. Pat. Nos. 2,684,109 to Youmans and 2,00,274 to Hayes.

As to claims 8, 15 and 16, Cording discloses a mast (Fig. 1) and a support cable having a first end, a middle portion and a second end, the first end coupled to a boom and the second end

adapted to be coupled to an anchoring object (cables fixed to boom and mast, Fig. 1). Sakai and Cording fail, however, to disclose that the platform comprises a tripod having adjustable legs and that the middle portion of the cable is slidingly coupled to the mast.

Youmans discloses that a platform comprises a tripod having adjustable legs (col. 2, lines 14-21).

Hayes discloses a support cable having a first end, a middle portion and a second end, the first end coupled to a boom, the middle portion slidingly coupled to a mast and the second end adapted to be coupled to an anchoring object (guy wire 87, coupled to boom through eye 90, slidingly coupled to mast 82 by pulley 85 and adapted to be coupled to transmission unit 60, Fig. 1; page 2, col. 2, lines 32-40).

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of Sakai including the boom and mast of Cording by including the adjustable tripod support of Youmans in order to make the support adjustable for optimal use by different individuals (col. 1, lines 24-28,) to make the support portable (col. 1, lines 35-40) and to provide secure vertical alignment of the support even on wet, uneven surfaces (col. 2, lines 20-35) and to include the support cable of Hayes, coupled to the boom at the first end, slidingly coupled to the mast in the middle portion and adapted to be coupled to an anchoring object at the second end, in order to balance and stabilize the mast.

Claims 10 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Published Jap. Application No. 60-233562 to Sakai in view of U.S. Pat. No. 3,796,322 to Cording, as applied to claims 1, 7 and 14 above, and further in view of U.S. Pat. No. 2,00,274 to Hayes.

Sakai and Cording fail to disclose that the boom comprises a truss with at least two legs wherein the carriage is configured to travel on two legs of the truss.

Hayes discloses that the boom comprises a truss (framework of beams, Fig. 1) with at least two legs (lower rails of boom; page 2, col. 2, lines 50-53) wherein the carriage is configured to travel on two legs of the truss (page 2, col. 2, lines 50-59).

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of Sakai, including the boom of Cording, by making the carriage travel on the bottom rails of the boom as taught by Hayes so that the carriage does not interfere with the bracing portions of the boom and so that the measuring rod, hanging from the carriage, is likewise not impeded by the bracing portions.

Claims 17, 18 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Published Jap. Application No. 60-233562 to Sakai in view of U.S. Pat. No. 3,796,322 to Cording, as applied to claims 14 and 25 above, and further in view of U.S. Pat. No. 4,854,166 to Futrell, II.

As to claim 17, Sakai and Cording fail to disclose that the measuring rod has a hollow hexagonal cross section.

Futrell, II discloses that the measuring rod has a hollow (col. 3, line 65) hexagonal cross section (col. 2, lines 1-2).

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of Sakai, including the boom of Cording, by using the hollow hexagonal rod for the measuring rod in order to minimize weight while obtaining a high strength rod.

As to claim 18, Sakai and Cording fail to disclose that the measuring rod has a round tubular cross section.

Futrell, II discloses that the measuring rod has a round tubular cross section (col. 2, lines 1-2).

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of Sakai, including the boom of Cording, by using the round tubular rod for the measuring rod in order to minimize weight while obtaining a high strength rod.

As to claim 26, Sakai and Cording fail to disclose that the apparatus is adapted to accommodate sensors selected from the group consisting of a particle collector, an air sample collector, a diffusive sampler, a thermometer, a psychrometer, a solar radiation detector, a barometer, an air speed indicator, a Nansen-type bottle, an alpha sampler, a pressure-valve sampler, an automated ISCO-type pump sampler, a gravity sediment corer with a core catcher, an Eckman-type dredge and an all-plastic Nansen-type bottle.

Futrell, II discloses that the measuring rod is adapted to accommodate an air speed indicator (measuring the velocity of air; col. 1, lines 19-20).

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of Sakai, including the boom of Cording, and adapted to measure water quality (flow velocity of river) by using the measuring rod of Futrell, II in order to additionally be able to measure air quality (air velocity).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Published Jap. Application No. 60-233562 by Sakai in view of U.S. Pat. No. 3,796,322 to Cording as applied to claim 14, in view of Published U.S. Application No. 2004/0177932 by Senesac et al.

Sakai and Cording fail to disclose that the means for positioning the carriage comprises a positioning rod coupled to the carriage, adapted to position the carriage at a desired location along the boom and configured to releasably couple to said platform when the carriage is positioned at a desired location on the boom.

Senesac et al. disclose a positioning rod coupled to a carriage, adapted to position the carriage at a desired location along a boom (paragraph 26) but fail to disclose that the positioning rod is configured to releasably couple a platform when the carriage is positioned at a desired location on the boom.

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of Sakai, including the boom and mast of Cording, by replacing the winch and pulley carriage positioning system of Sakai (as discussed in above for claim 20) with the positioning rod of Senesac et al in order to eliminate the complicated winch and pulley system making the apparatus easier to assemble. Furthermore, it would have been obvious to one of ordinary skill in the art to modify the positioning rod of Senesac et al. to make it releasably couple with the platform of the hydraulic feature measuring apparatus when the carriage is positioned at a desired location on the boom in order for the positioning rod to perform both the positioning and holding functions of the winch and pulley positioning system which it replaced.

Claims 27-29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Published Jap. Application No. 60-233562 to Sakai in view of U.S. Pat. No. 3,796,322 to Cording, in further view of U.S. Pat. No. 2,684,109 to Youmans and in further view of U.S. Pat.

No. 2,200,274 to Hayes and in further view of Published U.S. Application No. 2004/0177932 by Senesac et al.

As to claim 27, Sakai discloses a portable apparatus for measuring characteristics of a hydraulic feature in a river or stream comprising a positioning means adapted to be oriented horizontally and adapted to extend over a hydraulic feature (Fig. 1; abstract) a carriage adapted to travel along the positioning means (Fig. 1; abstract), a measuring rod slidingly coupled to the carriage, oriented vertically and having a measuring end adapted to measure a characteristic of a hydraulic feature (Fig. 1; abstract) a winch coupled to the positioning means (winch 25, Fig. 1) a winch cable having a first end and a second end, the first end coupled to the winch (Fig. 1) and a pulley adapted to support the winch cable (pulleys 20 and 22, Fig. 1) the second end of the winch cable coupled to the measuring rod proximate the measuring end (Fig. 1) wherein the measuring end of the measuring rod is repositioned upward when the winch cable is retracted by the winch through the pulley (abstract) and wherein the measuring rod is positioned to measure a characteristic of a hydraulic feature when the positioning means is positioned at a desired orientation, said carriage is positioned at a desired location on the positioning means and the measuring end of the measuring rod is positioned at a desired elevation relative to a hydraulic feature (abstract). Sakai fails, however, to disclose a tripod adapted for positioning adjacent a hydraulic feature, a boom coupled to the tripod adapted to be oriented horizontally relative to the tripod, adapted to articulate on a vertical axis though the tripod, adapted to extend over a hydraulic feature, a mast coupled to the tripod, oriented on a vertical axis through the tripod and a support cable having a first end a mid portion, a second end, the first end coupled to the boom, the mid portion slidingly coupled to the mast and the second end coupled to an anchoring object

and a positioning rod coupled to the carriage adapted to position the carriage at a desired location along the boom, configured to be releasably coupled to the tripod when the carriage is at a desired location on the boom.

Cording discloses a boom coupled to a mast (Fig. 1), adapted to be oriented horizontally, adapted to articulate on a vertical axis through the mast (Fig. 1 and col. 2, lines 7-16). Cording fails to disclose that the mast is coupled to a tripod adapted for positioning adjacent to a hydraulic feature.

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of the method of Sakai by replacing the positioning means with the boom and mast of Cording in order to enable measurement of the hydraulic feature from a single side of a river, and to make the positioning means rotatable.

Youmans discloses a tripod adapted for positioning adjacent a hydraulic feature (col. 2, lines 9-35) and a mast coupled to the tripod (Fig. 2).

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of Sakai including the boom and mast of Cording by including the adjustable tripod support of Youmans in order to make the support adjustable for optimal use by different individuals (col. 1, lines 24-28,) to make the support more easily portable (col. 1, lines 35-40) and to provide secure vertical alignment of the support even on wet, uneven surfaces (col. 2, lines 20-35).

Hayes discloses a support cable having a first end, a mid portion and a second end, the first end coupled to a boom, the mid portion slidingly coupled to a mast and the second end coupled to an anchoring object (guy wire 87, coupled to boom through eye 90, slidingly coupled

to mast 82 by pulley 85 and adapted to be coupled to transmission unit 60, Fig. 1; page 2, col. 2, lines 32-40).

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of Sakai including the boom and mast of Cording and including the adjustable tripod support of Youmans by including the support cable of Hayes, coupled to the boom at the first end, slidingly coupled to the mast in the middle portion and adapted to be coupled to an anchoring object at the second end, in order to balance and stabilize the mast.

Senesac et al. disclose a positioning rod adapted to position said carriage at a desired location along a boom (paragraph 26).

It would have been obvious to modify the hydraulic feature measuring apparatus of Sakai including the boom and mast of Cording and including the adjustable tripod support of Youmans and including the support cable of Hayes by replacing the carriage positioning winch and pulley with the positioning rod of Senesac (paragraph 26) in order to eliminate the complicated carriage winch from the design to facilitate easy assembly of the apparatus.

As to claim 28, Sakai further discloses that the measuring rod is adapted to accommodate a propeller (abstract).

As to claim 29, Hayes further discloses that the boom comprises a truss (framework of beams, Fig. 1) with at least two legs (lower rails of boom; page 2, col. 2, lines 50-53) wherein the carriage is configured to travel on two legs of the truss (page 2, col. 2, lines 50-59).

As to claim 31, Sakai further discloses that the apparatus is adapted to measure water quality (measuring system of flow velocity of river, title).

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Published Jap. Application No. 60-233562 to Sakai in view of U.S. Pat. No. 3,796,322 to Cording, in further view of U.S. Pat. No. 2,684,109 to Youmans and in further view of U.S. Pat. No. 2,200,274 to Hayes and in further view of Published U.S. Application No. 2004/0177932 by Senesac et al. as applied to claims 27 and 31, in view of U.S. Pat. No. 4,854,166 to Futrell, II.

Sakai, Cording, Youmans, Hayes, and Senesac et al. fail to disclose that the apparatus is adapted to accommodate sensors selected from the group consisting of a particle collector, an air sample collector, a diffusive sampler, a thermometer, a psychrometer, a solar radiation detector, a barometer, an air speed indicator, a Nansen-type bottle, an alpha sampler, a pressure-valve sensor, an automated ISCO-type pump sampler, a gravity sediment corer with a core-catcher, an Eckman-type dredge and an all-plastic Nansen-type bottle.

Futrell, II discloses that the measuring rod is adapted to accommodate an air speed indicator (measuring the velocity of air; col. 1, lines 19-20).

It would have been obvious to one of ordinary skill in the art to modify the hydraulic feature measuring apparatus of Sakai, including the boom and mast of Cording, including the adjustable tripod support of Youmans and including the support cable of Hayes and the positioning rod of Senesac, adapted to measure water quality (flow velocity of river), by using the measuring rod of Futrell, II in place of the propeller of Sakai in order to additionally be able to measure air quality (air velocity).

Allowable Subject Matter

Claims 11, 24, 30 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the features of a support carriage and a support rod coupled thereto, adapted to contact the ground and provide vertical support to the boom, are not disclosed by the prior art.

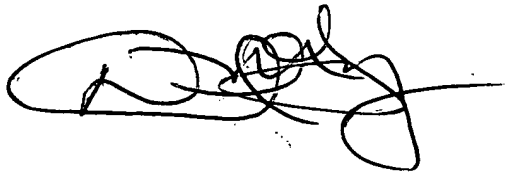
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. Nos. 3,314,009; 3,780,578; 4,866,985; 5,439,800; 5,734,111; 5,907,111; 5,942,440; 6,282,943; 2,180,354; 2,631,453; 2,896,908; 3,215,436 and 3,534,605, Published Jap. Application Nos. 60-263,863 and 61-283,823 and Published U.S. Application Nos. 2003/0177851 and 2004/0126205 disclose various hydraulic feature measuring systems, wading rods, cranes and supports.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George P. Bonanto whose telephone number is (571) 272-2182. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David M. Gray can be reached on (571) 272-2119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Gray
Primary Examiner

GPB